

Quarterly Reliability Monitoring Results

Quarters: Q1/2023 to Q4/2024

Based on structural similarity

Supplier		User Part Number					
Nexperia B.V.		BAV99QB					
Name of Laboratory		Part Description					
Assembly reliability labs		Nexperia DHAM MCD package Small Signal Bipolar Diode					
Test		Test Conditions		Duration	# Lots	# Quantity	# Rejects
# 1	TEST Pre- and Post-Stress Electrical Test	Tamb = 25 °C		N/A	see below	all parts	see below
# 2	PC Preconditioning	JESD22-A113 Bake Tamb = 125 °C Soak Tamb = 85 °C, RH = 85% Reflow soldering		24 hours 168 hours 3 cycles	228	9120	0
# 5	HTRB High Temperature Reverse Bias	MIL-STD-750-1 M1038 Method A Tj = Tjmax, Vr = 100% of max. datasheet reverse voltage		1000 hours	108	4320	0
# 7	TC Temperature Cycling	JESD22-A104 -65 °C to Tjmax, not to exceed 150°C		500 cycles	57	2280	0
# 8 or	UHAST Unbiased HAST	JESD22-A118 Tamb = 130 °C, RH = 85 %		96 hours	57	2280	0
# 8a	AC Autoclave	JESD22-A102 Tamb = 121 °C, RH = 100 % Pressure = 205 kPa (29.7 psia)					
# 9	H3TRB High Humidity High Temperature Reverse Bias	JESD22-A101 Tamb = 85 °C, RH = 85%, VR = 80 % of rated reverse voltage ^[1]		1000 hours	57	2280	0
# 10	IOL Intermittent Operating Life	MIL-STD-750 Method 1037 ton = toff, devices powered to insure ΔTj = 100 °C		333 hours	57	2280	0
# 20	RSH Resistance to Solder Heat	JESD22-A111 260 °C ± 5 °C		10 s	n.a.	n.a.	n.a.
# 21	SD Solderability	J-STD-002			28	840	0

[1] The maximum applied voltage is limited by test chamber set up and does not exceed 115V.

Calculation of FIT and MTTF

Test considered for FIT calculation: High Temperature Reverse Bias (HTRB, Test # 5)
Confidence level 60%, derated to 55 °C, activation energy 0.7 eV, test time 168 to 1000 hours

Wafer Fab	Technology	Quantity	Rejects	Failure Rate (FIT)	MTTF (hrs)
Nexperia DHAM	Small Signal Bipolar Diode	4320	0	0,98	1,02E+09

© 2025 Nexperia B.V.

All information hereunder is per Nexperia's best knowledge. This document does not provide for any representation or warranty express or implied by Nexperia. In case Nexperia has tested the product, this documentation reflects the outcome of the analysis of the actually tested parts only.